



NC State University

North Carolina **Solar Center**

# **Status of Interconnection and Net Metering in U.S. States**

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**Interstate Renewable Energy Council (IREC)**

**Under 2-MW Interconnection and Net Metering for Renewables:  
What Utility Decision-Makers Need to Know  
Westminster, Colorado  
February 22, 2006**



INTERSTATE RENEWABLE ENERGY COUNCIL



# Interstate Renewable Energy Council

- Database of State Incentives for Renewable Energy (DSIRE)
- National Interconnection Project
- “Schools Going Solar” database
- Training / certification
- *Small Wind-Energy News*
- Community outreach / MSR (SPA) news



# Evolution of Interconnection Standards

- PURPA (1978)
- State net-metering laws (1983 - present)
- NREL *Making Connections* report (2000)
- FERC activity (2002 - present)
- Technical standards - IEEE 1547 (2003)
- EPA Act 2005

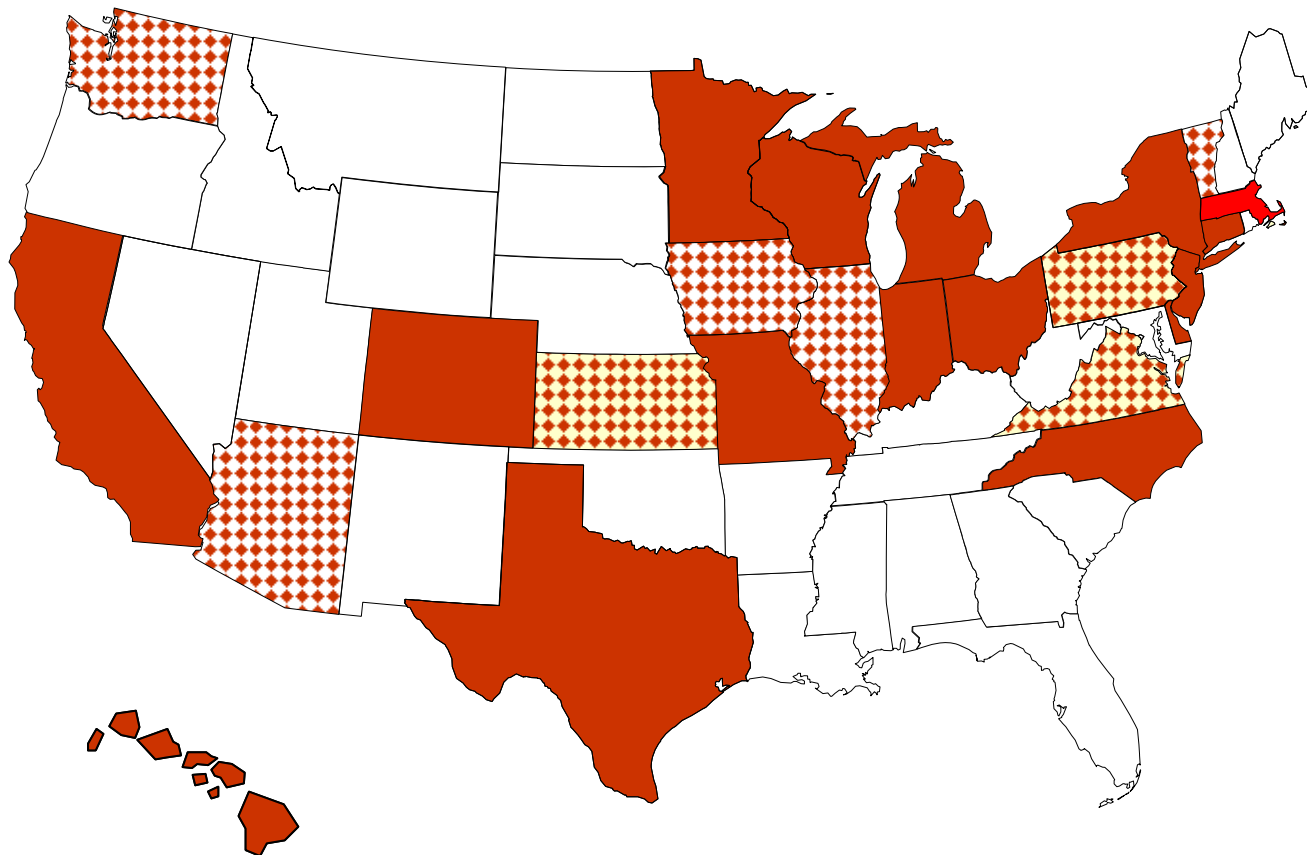


# Interconnection Issues

- Application cost
- Limits on system size / overall enrollment
- Multiple levels of interconnection
- Standby rates
- Technical screens
- Standard form agreement
- Insurance requirements
- External disconnect switch
- Network interconnection provisions
- Dispute resolution



# DG Interconnection Rules



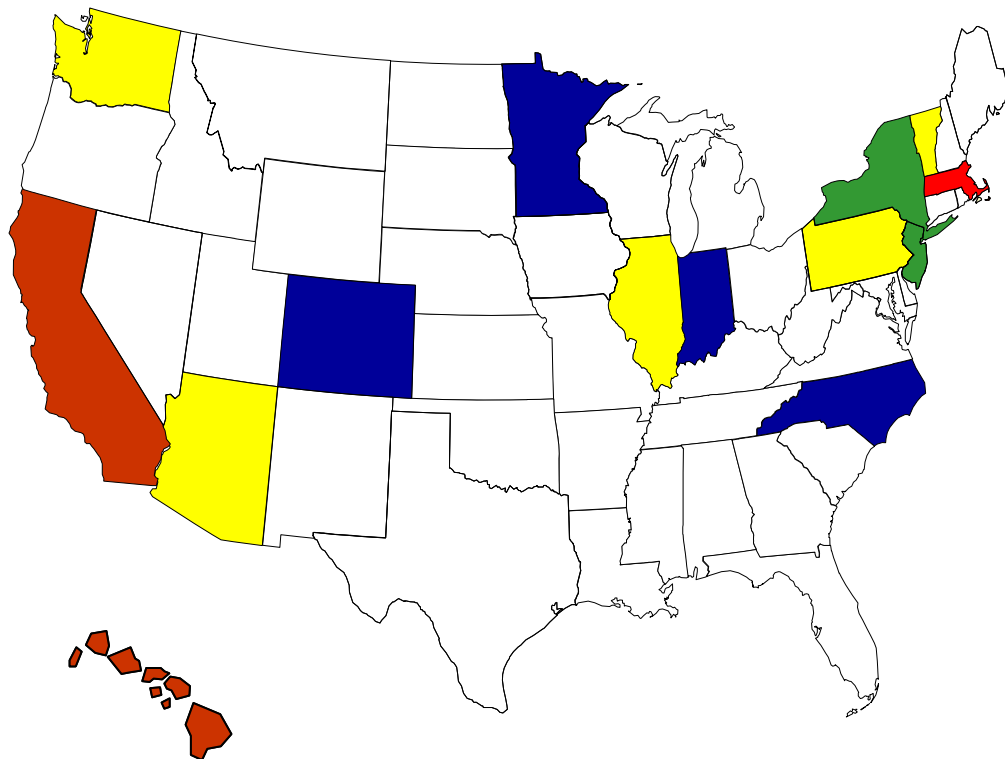
■ Rules adopted

▣ Rules under development



# DG Interconnection Developments

*(since August 2004)*



- New rules adopted:  
CO, IN, MN, NC
- New rules under development:  
AZ, IL, PA, VT, WA
- Existing rules expanded:  
NJ, NY
- Existing rules under revision:  
CA, HI, MA



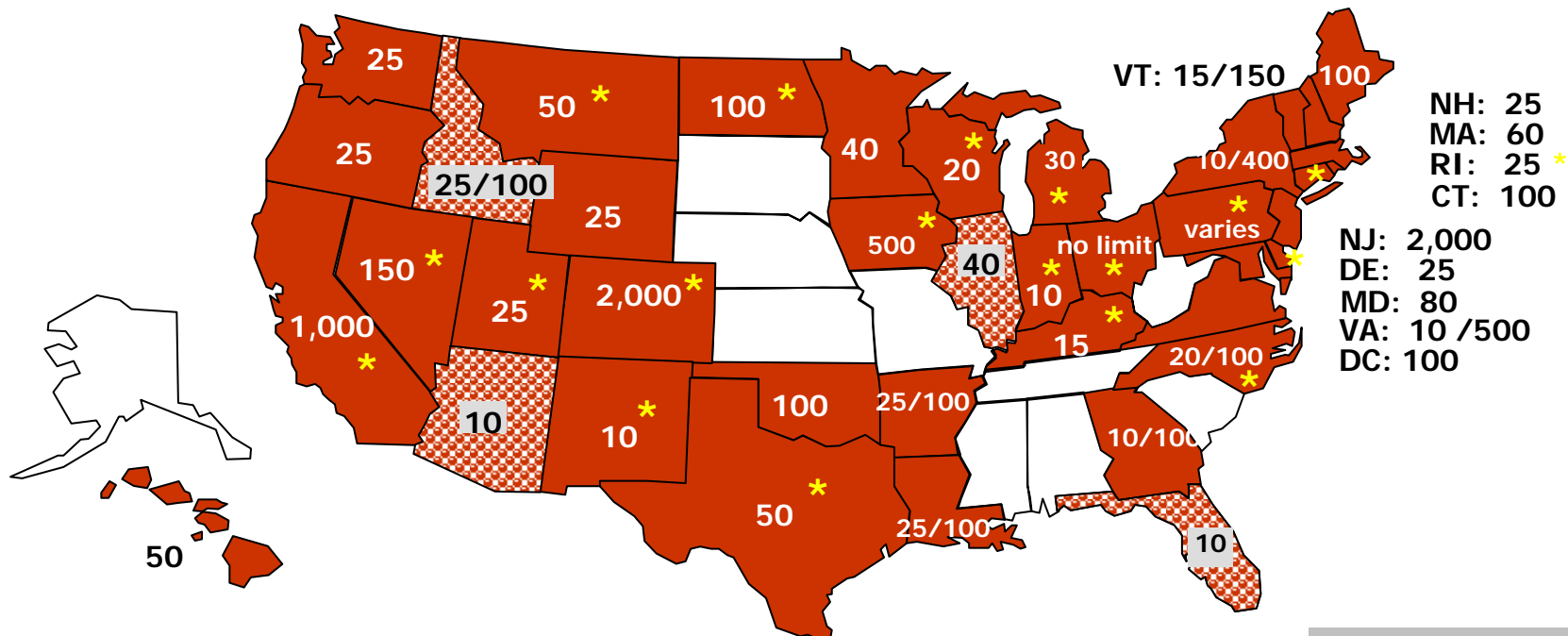
# Net-Metering Issues

- Eligible technologies
- Applicable sectors
- Limit on system size / overall enrollment
- Treatment of excess generation
- Interconnection standards
- Flexibility to accommodate market growth





# Net Metering Rules



- State-wide net metering for all utility types
- State-wide net metering for certain utility types (e.g., IOUs only)
- Net metering offered by one or more individual utilities

#s indicate system size limit (kW); in some cases limits are different for residential and commercial as shown

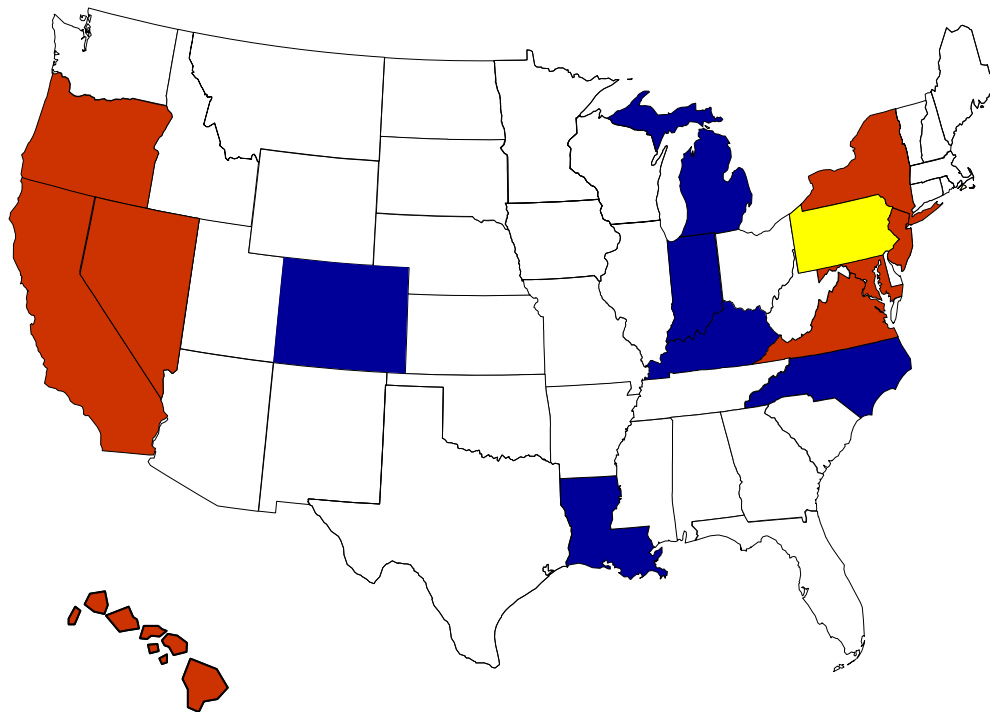
**Net metering is  
available in  
40 states + D.C.**





# Net-Metering Developments

*(since August 2004)*



- New rules adopted:  
CO, DC, KY, IN, LA, MI, NC
- New rules under development:  
PA
- Existing rules expanded:  
CA, HI, MD, NV, NJ, NY  
OR, VA



## **Spotlight: New Jersey** *(revised rules, 9/04)*

- Net metering available to RE systems up to 2 MW
- Statewide cap on net-metered systems removed
- Three levels of interconnection
- Customer-generators retain RECs
- External disconnect no longer required
- Explicit time frames preclude “applicant limbo”
- Network interconnection permitted
- Ongoing stakeholder workgroup to improve process



# Spotlight: California

- Net metering since 1996; applies to IOUs and co-ops
- Applies to RE systems up to 1 MW
- Net-metering law amended three times in 2005
- Interconnection rules adopted in 2000
- DG interconnection up to 10 MW per system
- Ongoing DG interconnection stakeholder workgroup
- Leads U.S. in PV and wind installations



# Spotlight: Municipal Utilities

## *San Antonio City Public Service Distributed Generation Program*

- Available to commercial, residential customers
- PV, wind, hydro, biomass systems up to 25 kW
- No limit on overall enrollment
- NEG carried over to next bill @ avoided cost



# Spotlight: Municipal Utilities

## *Austin Energy Net Metering Program*

- Available to commercial, residential customers
- PV, wind, hydro, biomass systems up to 20 kW
- Limit on overall enrollment TBD
- NEG carried over to next bill; rate varies



# Spotlight: Municipal Utilities

*JEA*

*Net Metering Program*

- Available to residential customers
- PV, wind systems up to 10 kW
- No limit on overall enrollment
- NEG carried over to next bill @ retail rate





# Spotlight: Municipal Utilities

## *Bowling Green Municipal Utilities Net Metering Program*

- Available to commercial, residential customers
- PV, wind, hydro, fuel cells up to 25 kW
- No limit on overall enrollment
- NEG negotiated with utility



# Spotlight: Cooperative Utilities

## *Montana Electric Cooperatives' Association Net Metering Program*

- Available to commercial, residential customers
- PV, wind, hydro, biomass, geothermal, fuel cells  
up to 10 kW
- No limit on overall enrollment
- NEG granted to utility



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*Details on all state and local net-metering  
rules and interconnection standards are  
available at*

[www.dsireusa.org](http://www.dsireusa.org)



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